

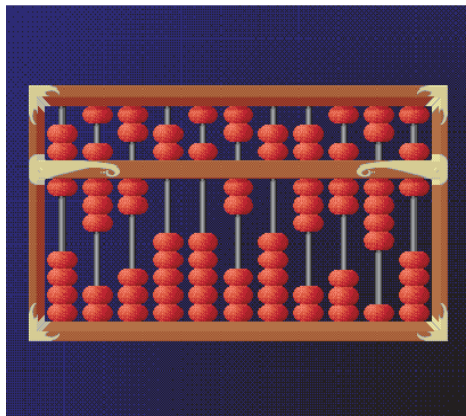
UNIT 1

Computer History

Start-up

Answer these questions:

1. Which of the following devices have you heard of?
 - Abacus
 - Astrolabe
 - “Antikythera Mechanism”
2. Which mechanism is considered as the earliest computer device?

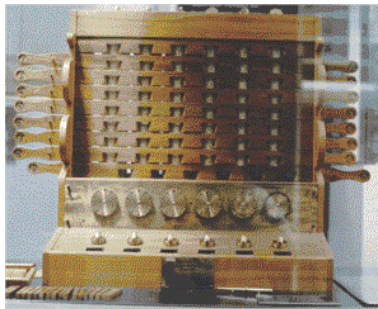


Reading

"Computer" was originally a job title: it was used to describe those human beings (predominantly women) whose job was to perform the repetitive calculations required to compute such things as navigational tables, tide charts, and planetary positions for astronomical almanacs.

An **abacus**, also called a **counting frame**, is a calculating tool used primarily in parts of Asia for performing arithmetic processes. Today, abacuses are often constructed as a bamboo frame with beads sliding on wires, but originally they were beams or stones moved in grooves in sand or on tablets of wood, stone, or metal. The abacus was in use centuries before the adoption of the written modern numeral system and is still widely used by merchants, traders and clerks in Asia, Africa, and elsewhere.

The first gear-driven calculating machine to actually be built was probably the *calculating clock*, so named by its inventor, the German professor Wilhelm Schickard in 1623. This device got little publicity because Schickard died soon afterward in the bubonic plague.



Schickard's Calculating Clock

In 1642 Blaise Pascal, at age 19, invented the *Pascaline* as an aid for his father who was a tax collector. Pascal built this gear-driven one-function calculator (it could only add) but could not sell many because of their exorbitant cost and because they really were not that accurate.

Yet the first devices having similarities with today's computers are the **astrolabes**, circular instruments for observing the stars. Its many uses included locating and predicting the positions of the Sun, Moon, planets and stars; determining local time given local latitude and vice-versa; surveying; and triangulation.

The **Antikythera mechanism**, is an ancient mechanical calculator (also described as the first known mechanical computer) designed to calculate astronomical positions. It was discovered in the Antikythera wreck off the Greek island of Antikythera, between Kythera and Crete, in 1901. Subsequent inves-

tigation, particularly in 2006, dated it to about 150–100 BC; and hypothesised that it was on board a ship that sank en route from the Greek island of Rhodes to Rome. Technological artefacts of similar complexity did not reappear until a thousand years later.

Comprehension and Vocabulary Exercises

A. Put the following devices in the chronological order of their occurrence:

Pascaline, Antikythera mechanism, calculating clock, abacus, astrolabes

- | | |
|---------|---------|
| 1. | 4. |
| 2. | 5. |
| 3. | |

B. State whether these statements are true or false:

1. The abacus preceded the adoption of the written modern numeral system
2. The calculating clock was the first to use gears
3. Pascaline was the first known mechanical computer
4. Astrolabes were the first devices having similarities with today's computers
5. The Antikythera mechanism was older than the simple astrolabes

C. Match the words with their definition:

- | | |
|------------------|---|
| 1. groove | a. a narrow channel, (in a gramophone record) |
| 2. gear | b. highly contagious disease |
| 3. plague | c. a work of art, (esp. of archaeological interest) |
| 4. triangulation | d. a method of surveying divided into triangles |
| 5. surveying | e. a toothed wheel |
| 6. artefact | f. measuring land surfaces and putting on a map |

D. Match the words/phrases of the two columns:

1. Abacus	a. Ancient complex artefact
2. Calculating clock	b. Gears
3. Pascaline	c. Counting frame
4. Astrolabes	d. Only addition
5. Antikythera mechanism	e. Observing the stars

Language Development

Fill in the blanks with the correct form of the verbs: *determine* and *decide*, or their correct derivative (decisively, decision, decisive, determination)

1. He brought the question to its final
2. I have not yet what to do.
3. The price is by the market demand.
4. The incident was for his career.
5. The two points a line.
6. Experience often ability.
7. The weather me against going.
8. His performance influenced the outcome.
9. The river the boundary of his property.
10. He got angry with the of the compensation.

Chronological Table of Computer Evolution

Computer History Year/Enter	Computer History Inventors/Inventions	Computer History Description of Event
1936	Konrad Zuse - Z1 Computer	First freely programmable computer.
1942	John Atanasoff & Clifford Berry ABC Computer	Who was first in the computing biz is not always as easy as ABC.
1944	Howard Aiken & Grace Hopper Harvard Mark I Computer	The Harvard Mark 1 computer.
1946	John Presper Eckert & John W. Mauchly ENIAC 1 Computer	20,000 vacuum tubes later...
1948	Frederic Williams & Tom Kilburn Manchester Baby Computer & The Williams Tube	Baby and the Williams Tube turn on the memories.
1947/48	John Bardeen, Walter Brattain & Wiliam Shockley The Transistor	No, a transistor is not a computer, but this invention greatly affected the history of computers.
1951	John Presper Eckert & John W. Mauchly UNIVAC Computer	First commercial computer & able to pick presidential winners.
1953	International Business Machines IBM 701 EDPM Computer	IBM enters into 'The History of Computers'.
1954	John Backus & IBM FORTRAN Computer Programming Language	The first successful high level programming language.
1955 (In Use 1959)	Stanford Research Institute, Bank of America, and General Electric ERMA and MICR	The first bank industry computer - also MICR (magnetic ink character recognition) for reading checks.
1958	Jack Kilby & Robert Noyce The Integrated Circuit	Otherwise known as 'The Chip'
1962	Steve Russell & MIT Spacewar Computer Game	The first computer game invented.

1964	Douglas Engelbart Computer Mouse & Windows	Nicknamed the mouse because the tail came out the end.
1969	ARPANet	The original Internet.
1970	Intel 1103 Computer Memory	The world's first available dynamic RAM chip.
1971	Faggin, Hoff & Mazor Intel 4004 Computer Microprocessor	The first microprocessor.
1971	Alan Shugart & IBM The "Floppy" Disk	Nicknamed the "Floppy" for its flexibility.
1973	Robert Metcalfe & Xerox The Ethernet Computer Networking	Networking.
1974/75	Scelbi & Mark-8 Altair & IBM 5100 Computers	The first consumer computers.
1976/77	Apple I, II & TRS-80 & Commodore Pet Computers	More first consumer computers.
1978	Dan Bricklin & Bob Frankston VisiCalc Spreadsheet Software	Any product that pays for itself in two weeks is a surefire winner.
1979	Seymour Rubenstein & Rob Barnaby WordStar Software	Word Processors.
1981	IBM The IBM PC - Home Computer	From an "Acorn" grows a personal computer revolution
1981	Microsoft MS-DOS Computer Operating System	From "Quick And Dirty" comes the operating system of the century.
1983	Apple Lisa Computer	The first home computer with a GUI, graphical user interface.
1984	Apple Macintosh Computer	The more affordable home computer with a GUI.
1985	Microsoft Windows	Microsoft in war with Apple.